Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
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June 3, 2015

Ms. Joan Boegel
MIT Lincoln Laboratory
244 Wood Street
Lexington, MA 02420

RE: LEXINGTON
Transmittal No.: X262821
Application No.: NE-14-009
Class: *SM79-7*
FMF No.: 131532
AIR QUALITY PLAN APPROVAL

Dear Ms. Boegel:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Air and Waste, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. This Application concerns the consolidation of previously issued plan approvals at your research and development facility located at 244 Wood Street in Lexington, Massachusetts ("Facility"). The previous Application MBR-08-COM-002 bears the seal and signature of Ms. Kelly Cronin, Massachusetts Registered Professional Engineer Number 45857.

This Application was submitted in accordance with 310 CMR 7.02(12) Consolidation of Applicable Requirements as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-N, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

MIT Lincoln Laboratory (the Permittee) conducts research and development aimed at solving problems critical to national security including sensors, signal processing and embedded computing, communications, and integrated sensing and decision support, all supported by a broad research base in advanced electronics. The Permittee takes projects from the initial concept stage, through simulation and analysis, to design and prototyping, and finally to field demonstration. The Permittee also undertakes government sponsored, nondefense projects in areas such as the development of systems to improve air traffic control and air safety as well as systems used in weather surveillance and space science missions.

The Permittee proposed to obtain a single consolidated permit covering all regulated emissions from existing combustion and process equipment/operations at the Facility. The facility-wide emissions will be restricted below major source thresholds for nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), hazardous air pollutants (HAP), particulate matter (PM), and sulfur dioxides (SO_2).

Proposed near future plans

The Permittee operates several existing emergency generators which are more than twenty-five (25) years old. The Permittee is proposing to replace twelve (12) existing emergency engines totaling 1630 kilowatts (KW) with a smaller number of new, more efficient diesel engines. The Permittee shall submit Compliance Certifications Forms in a timely manner for any such new emergency generators under the Environmental Results Program (ERP) for emergency engines, in accordance with 310 CMR 7.26(42).

The Permittee may construct new laboratory buildings which would be supported by additional emergency generators and a new central utility building with dual fuel fired boilers with heat input capacity greater than 10 MMBtu/hr but less than 40 MMBtu/hr. The Permittee shall submit Compliance Certifications Forms in a timely manner (i. e., within 60 days of commencement of operation for any emergency generator and/or boilers) for any such new boilers and emergency generators under the Environmental Results Program (ERP) in accordance with 310 CMR 7.26(30) – (32) and 310 CMR 7.26(42), respectively.

The Permittee shall report decommissioning of any existing emergency generators and boilers on the next triennial Source Registration Forms.

Combustion Equipment (EU1 - EU6)

The Permittee houses a total of 24 emergency diesel generators at the Facility, including: EU1, EU2, and EU3 which are rated at 2000 KW, 800 KW, and 500 KW, respectively; EU4 consists of 21 small emergency diesel engines, each engine less than 450 KW, totaling 2570 KW; and EU5 is one (1) natural gas fired emergency generator rated at 60 KW to provide back-up

electrical power for buildings at the Facility. EU5 was installed in 2007 (after March 23, 2006). The Permittee submitted a Compliance Certification Form for EU5 to MassDEP under the Environmental Results Program (ERP) for Emergency Engines, 310 CMR 7.26(42).

The Permittee also houses 9 natural gas fired small boilers, 2 furnaces, and 4 water heaters to provide space heating and domestic hot water for the Annex Buildings at the Facility. The subject gas fired equipment, with a total heat input rating of 8.727 million British thermal units per hour (MMBtu/hr), are designated as EU6.

EU1 is regulated under Approval No. MBR-08-COM-002. Approval No. MBR-08-COM-002 also caps total air emissions for units EU1, EU2, EU3, EU4, and EU6. Units EU2, EU3, and EU4 (300 KW to 450 KW units) are regulated under 310 CMR 7.03(10). As set forth in Table 8, Condition No. 5, Approval No. MBR-08-COM-002 is superseded by this Approval.

Microelectronics Laboratory Processes (EU7 - EU9)

The Permittee's Microelectronics Laboratory (ML) houses semiconductor research and development and prototype fabrication, which involves the processing of silicon wafers using acids, hydrides, and organic solvents in a clean room environment. The ML is operating 24 hours per day, 5 days per week. Process emissions from ML are vented through three separate exhaust systems for: acid process emissions (designated as EU7); hydride process emissions (designated as EU8); and solvent process emissions (designated as EU9). The acid and hydride exhaust systems utilize scrubbers to control emissions of HAP including arsine, phosphine, hydrofluoric acid, and hydrochloric acid. ML's current actual process emissions are 0.6 tons per year of VOC and 0.04 tons per year of HAP, based on material balance calculations. EU7 and EU8 each have a separate gas scrubbing system.

EU7 is constructed of fiberglass reinforced plastic (FRP) to a length of 10.5 feet and a cross-secional area of 100 square feet. EU7 is filled with Tri-Pak packing material to a length of 7.6 feet giving a scrubber pressure drop of 2.0 inches of water column. EU7 exhaust system uses Viron Model VHS 92-156 horizontal packed bed scrubber having an air handling capacity of 50,000 standard cubic feet per minute (scfm) at 70 degrees Fahrenheit (^{o}F).

The scrubbing liquid for EU7 is water, which is recirculated at a rate of 400 gallons per minute (GPM) with a make-up rate of 2 GPM. It is held in a sump tank where the scrubbing liquid's pH is monitored and maintained between 7.0 and 9.0.

EU8 is constructed of FRP to a length of 10.3 feet and cross-sectional area of 60 square feet. EU8 is filled with Tri-Pak packing material to a length of 7.5 feet giving a scrubber pressure drop of 2.0 inches of water column. EU8 exhaust system uses Viron Model VHS 9096 horizontal packed bed scrubber having an air handling capacity of 27,750 scfm at 70 ^{o}F.

The scrubbing liquid for EU8 is water, which is recirculated at a rate of 240 GPM with a make-up rate of 1.5 GPM. It is held in a sump tank where the scrubbing liquid's pH is monitored and maintained between 7.0 and 9.0.

Other Processes (EU10 - EU12)

Other processes usingVOC and HAP include a paint spray booth located in Building E (designated as EU10), a batch vapor degreaser using trichloroethylene (TCE) located in Building-I (designated as EU11), and an aqueous vapor degreaser located in Building D (designated as EU12). These sources are exempt from plan approval and shall comply with all the requirements of 310 CMR 7.03.

• A paint spray booth (EU10) is used to apply paints and coatings to metal parts for research and development programs. Paint spraying is done occasionally, as needed. The paint spray booth was installed and commenced operation in 1969, before the pre-construction plans approval requirements of 310 CMR 7.02. Operation of this paint spray booth shall conform to the requirements of 310 CMR 7.03(16). The primary spray gun is a High Volume Low Pressure (HVLP) gun complying with 310 CMR 7.03(16)(d)2. The Facility uses a hobby-type air brush (Binks Wren "B" Model #59-1006B) coating application method to apply paints or coatings to small parts. The transfer efficiency of the air brush is equivalent to or higher than that of HVLP spray application to apply a very small volume of paints to small parts. The Department approves the use of this hobby-type air brush, pursuant to 310 CMR 7.03(16)(d)3.

• A batch vapor degreaser (EU11) is using TCE to clean metal parts in support of research and development programs. EU11, which was installed and commenced operation in 2007, consumes less than 100 gallons per month of TCE. Therefore, EU11 is subject to 7.03(8). Also, EU11's design and operation shall conform to the requirements of 310 CMR 7.18(8)(b).

• An aqueous degreaser (EU12) is used to clean metal parts in the machine shop supporting research and development programs. EU12 consumes less than 100 gallons per month of a cleaning fluid having less than 5% water-soluble organic material and its design and operation shall conform to the requirements of 310 CMR 7.18(8)(d). EU12 qualifies for the 310 CMR 7.03(8) exemption due to the usage being less than 100 gallons per month.

Existing De minimis Emissions Sources

The Permittee houses process emissions sources that qualify for the 310 CMR 7.02(2)(b)7 de minimis exemption.

- Isopropanol, a VOC, is used to clean metal parts in small bench-top ultrasonic cleaning units and in small volume containers at ambient temperature. Based on laboratory procedures and material balance records, it is calculated that approximately 80% of the spent isopropanol is recovered and disposed of as hazardous waste, the remaining 20% is

emitted to the atmosphere. VOC emissions from this cleaning process are less than 1.0 ton per year, based on material balance calculations.

- Isopropanol is used with disposable wipes to hand clean equipment in an airlock vestibule before the equipment is introduced into a research clean room. All isopropanol used for that cleaning evaporates and is emitted to the atmosphere via general room exhaust. Based on historical solvent usage records, uncontrolled VOC emissions from this cleaning process are less than 1.0 ton per year.

- The Permittee houses numerous research and development laboratories, some of which use chemicals in laboratory fume hoods. Emissions from these laboratory fume hoods meet the "insignificant activities" criteria of 310 CMR 7.02(2)(b)16 and are therefore exempt from the pre-construction plans approval requirement of 310 CMR 7.02. There are currently a total of 124 laboratory fume hoods at MIT Lincoln Laboratory. The research activities conducted in these hoods are highly varied in terms of chemicals, processes and frequency of use. During a focused data collection study in 2014, utilizing detailed activity logs to calculate the material balance for VOCs and HAPs used in the most chemically intensive fume hoods, emission factors of 4.2 lbs VOC/fume hood/yr and 3.5 lbs HAP/fume hood/yr were derived. Applying these emission factors to all 124 fume hoods, the total annual emissions were estimated to be 0.26 tons/yr VOC and 0.22 tons/yr HAP, significantly less than the 1 ton/yr "de minimis" emissions threshold of 310 CMR 7.02(2)(b)7. In order to comply with the record-keeping requirements of 310 CMR 7.02(2)(d), the Permittee shall keep documentation of the 2014 emissions estimation methodology, up-to-date records of the number of laboratory fume hoods, and emissions calculations, based on this number and the empirical emission factors, to show that the VOC and HAP emissions are each less than 1.0 ton per year from these fume hoods.

2. EMISSION UNIT IDENTIFICATION

Each Emission Unit ("EU") identified in Table 1 and associated stack is subject to and regulated by this Plan Approval:

Table 1

EU	Description	Stack Number
EU1	Building F-Caterpillar Model 3516B DITA Emergency Diesel Generator 2000 KW	32
EU2	Building S-Caterpillar Model 3508 Emergency Diesel Generator 800 KW	19

Table 1		
EU	**Description**	**Stack Number**
EU3	Building ML-Caterpillar Model 3412 Emergency Diesel Generator 500 KW	16
EU4	21 Emergency Diesel Generators, each smaller than 450 KW, totaling 2750 KW	4 – 15, 17, 18, 20 - 22, 33 - 36
EU5	Annex 3, Cummins Emergency Generator natural gas fired, 60KW	44
EU6	Annex Buildings, 9 Boilers, 2 Furnaces, and 4 Water heaters, each natural gas fired, each less than 3 MMBtu/hr, totaling 8.73 MMBtu/hr	37, 38
EU7	Building ML-Acid scrubber	1
EU8	Building ML Hydride scrubber	39
EU9	Building ML Solvent use ventilation	3
EU10	Building E-Paint Spray Booth	43
EU11	Building I-Batch vapor Degreaser	General ventilation
EU12	Building D-Aqueous Degreaser	General ventilation

Table 1 Key:

EU# = Emission Unit Number
ML = Microelectronics Laboratory
KW = Kilowatts
MMBtu/hr = million British thermal units per hour

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operationaland Emission Limits as contained in Table 2, Table 3 and Table 4:

Table 2 - Emission Limitations - EU1				
Pollutant	**Grams per brake horsepower-hour[1]**	**Pounds per hour[2]**	**Allowable Emissions Tons per Month[2]**	**Allowable Emissions Tons per Rolling 12 Month Period [2]**
NOx	5.17	32.36	3.65	4.05
CO	0.62	3.86	0.43	0.48
VOC	0.10	0.64	0.07	0.08
PM	0.13	0.79	0.09	0.10

SO2	0.0055	0.035	0.003	0.004

Table 2 Footnotes:
[1] These emission limitations shall only apply to engine loads of 75 % or greater
[2] These emission limitations shall apply to all engine loads.

Table 3

EU	Pollutant	Operational Limits	Emission Limits
EU1	NO_x	* maximum 250 hours per 12 month rolling period * operate only using ULSD	See Table 2
	CO		
	VOC		
	PM		
	SO_2		
EU1 EU2 EU3 EU4[1]	NO_x	* operate only during emergency and a maximum 1.0 hour/month testing, 310 CMR 7.03(10), unless the Permittee has requested and been granted written approval to operate a generator for a non-emergency event, such as a planned maintenance shutdown. * operate only using ULSD	See Table 4
	CO		
	VOC		
	PM		
	SO_2		
EU2 EU3 EU4[1]	NO_x	* maximum 300 hours per 12 months rolling period, 310 CMR 7.03(10) * operate only using ULSD	
	CO		
	VOC		
	PM		
	SO_2		
EU5	NMHC + NO_x	maximum 300 hours per 12 months rolling period	310 CMR 7.26 (42), 40 CFR 89
	CO		
	PM		
EU6	NO_x	N/A	See Table 4
	CO		
	VOC		
	PM		
	SO_2		
EU7 EU8 EU9	VOC	See Table 5, 6, and 8	4.0 TPY from ML Process
	HAP		4.0 TPY from ML Process

Table 3			
EU	**Pollutant**	**Operational Limits**	**Emission Limits**
EU10	VOC, HAP	Permit by Rule requirements	310 CMR 7.03(16)
EU11	VOC, HAP, Trichloro-ethylene	Permit by Rule requirements	310 CMR 7.03(8), 310 CMR 7.18(8)(b)
EU12	VOC	Permit by Rule requirements	310 CMR 7.03(8), 310 CMR 7.18(8)(d)

Table 3 Footnotes:

[1] For units only between the sizes of 300 to 1000 KW

Table 3 Key:

EU# = Emission Unit Number
N/A = Not Applicable
ML = Microelectronics Laboratory
NO_x = Nitrogen Oxides
CO = Carbon Monoxide
VOC = Volatile Organic Compounds
HAP = total Hazardous Air Pollutants.
PM = Particulate Matter
SO_2 = Sulfur Dioxide
NMHC = Non methane Hydrocarbon
TPY = tons per consecutive12-month period
ULSD = Ultra Low Sulfur diesel having maximum sulfur content less than 0.0015 percent by weight
MMBtu = million British thermal units
KW = kilowatts

B. FACILITY-WIDE EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Facility-wide Emission Limits as contained in Table 4:

Table 4					
Pollutant	**Total Combustion TPY**	**ML Process TPY**	**Other Process TPY**	**Total Facility-wide TPM**	**Total Facility-wide TPY**
NO_x	31.36	N/A	N/A	**26.3**	**31.36**

Table 4					
Pollutant	**Total Combustion TPY**	**ML Process TPY**	**Other Process TPY**	**Total Facility-wide TPM**	**Total Facility-wide TPY**
CO	8.18	N/A	N/A	**5.7**	**8.18**
VOC	1.86	4.0	2.0	**6.1**	**7.86**
HAP	N/A	4.0	2.0	**4.5**	**6.0**
PM	1.72	N/A	N/A	**1.4**	**1.72**
SO_2	1.25	N/A	N/A	**1.1**	**1.25**

Table 4 Key:

NO_x = Nitrogen Oxides
CO = Carbon Monoxide
VOC = Volatile Organic Compounds
HAP = Hazardous Air Pollutants
PM = Particulate Matter
SO_2 = Sulfur Dioxide
TPY = tons per consecutive12-month period
TPM = tons per month
ML = Microelectronics Laboratory
N/A = Not Applicable

C. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 5, 6, and 7:

Table 5	
EU	**Monitoring and Testing Requirements**
EU1 - EU4	1. The Permittee shall monitor usage of ULSD and hours of operation for EU1 – EU4, for each calendar month, as well as for the prior 11 months.
EU5 – EU6	2. The Permittee shall monitor usage of natural gas and hours of operation for EU5 and EU6, for the month, as well as for the prior 11 months.
EU7 - EU9	3. The Permittee shall monitor usage of acids for EU7, hydrides for EU8, organic solvents for EU9, and isopropanol used for general cleaning in ML, for the month, as well as for the prior 11 months.
EU10 – EU12	4. The Permittee shall monitor usage of paints and coatings for EU10, trichloroethylene for EU11, and aqueous cleaning fluid containing less than 5% water-soluble organic material for EU12, for the month, as well as for the prior 11 months.
Facility-	5. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.

Table 5	
EU	**Monitoring and Testing Requirements**
wide	6. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13

Table 5 Key:

EU# = Emission Unit Number
ULSD = Ultra Low Sulfur diesel having maximum sulfur content less than 0.0015 percent by weight

Table 6	
EU	**Record Keeping Requirements**
EU1 – EU6	1. In order to verify that NO_x, CO, VOC, PM and SO_2 emission limits from these emission units do not exceed the emission limits contained in Table 2, Table 3, and Table 4 of this Plan Approval, maintain on-site adequate records to document compliance with said emission limits. These records shall include monthly usage of ULSD, natural gas, and hours of operation for each unit as applicable, for the month, as well as for the prior 11 months.
EU7 – EU9	2. In order to verify that VOC and HAP emission limits from these emission units do not exceed the emission limits contained in Table 2, Table 3, and Table 4 of this Plan Approval, maintain on-site adequate records to document compliance with said emission limits. These records shall include a list of VOC-containing or HAP-containing materials used during each month, the VOC and HAP content of each material, and the estimated actual emissions of VOC and HAP, based on usage and emissions factors, for the month, as well as for the prior 11 months.
EU10	3. In order to verify that VOC and HAP emission limits from EU10 do not exceed the emission limits contained in Table 3 and Table 4 of this Plan Approval, maintain on-site adequate records to document compliance with Regulation 310 CMR 7.03(16). The transfer efficiency of the High Volume Low Pressure (HVLP) primary spray gun shall comply with 310 CMR 7.03(16)(d)2. The transfer efficiency of hobby-type air brush shall comply with 310 CMR 7.03(16)(d)3.
EU11	4. In order to verify that VOC and HAP emission limits from EU11 do not exceed the emission limits contained in Table 3 and Table 4 of this Plan Approval, maintain on-site adequate records to document compliance with Regulation 310 CMR 7.03(8) and 310 CMR 7.18(8)(b).
EU12	5. In order to verify that VOC and HAP emission limits from EU12 do not exceed the emission limits contained in Table 3 and Table 4 of this Plan Approval, maintain on-site adequate records to document compliance with Regulation 310 CMR 7.03(8) and 310 CMR 7.18(8)(d).

Table 6	
EU	**Record Keeping Requirements**
Facility-wide	6. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational and emission limits contained in Table 2, Table 3, and Table 4 above. Records shall also include the estimated actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping.
	7. The Permittee shall maintain records of monitoring and testing as required by Table 5.
	8. The Permittee shall maintain a copy of this Plan Approval, underlying Application and most up-to-date SOMPs for the EUs approved herein. A sign referencing the Plan Approval and stating the location of these documents shall be posted at or adjacent to the subject equipment.
	9. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
Facility-wide	10. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	11. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	12. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	13. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 6 Key:

EU# = Emission Unit Number
SOMP = Standard Operating and Maintenance Procedure
NO_x = Nitrogen Oxides
CO = Carbon Monoxide
VOC = Volatile Organic Compounds
HAP = Hazardous Air Pollutants
PM = Particulate Matter
USEPA = United States Environmental Protection Agency
PCD = Pollution Control Device
ULSD = Ultra Low Sulfur diesel having maximum sulfur content less than 0.0015 percent by weight
SO_2 = Sulfur Dioxide

Table 7	
EU	**Reporting Requirements**
Facility-wide	1. The Permittee shall submit an annual report of the emissions data required in Table 2, Table 3, and Table 4 for the period of January 1 through December 31 inclusive to Northeast Regional Office of MassDEP, BAW Permit Chief, by no later than January 30 of each year. An electronic version of the record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/dep/air/approvals/aqforms.htm#report.
	2. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	3. The Permittee shall submit a copy to MassDEP of any record required to be maintained by this Plan Approval within 30 days from MassDEP request.
	4. The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing, for any emission testing as defined in Table 5 Monitoring and Testing Requirements.
Facility-wide	5. The Permittee shall submit to MassDEP a final stack emission test results report, within 30 days after emission testing, for any emission testing as defined in Table 5 Monitoring and Testing Requirements.
	6. The Permittee shall notify the Northeast Regional Office of MassDEP, BAW Permit Chief by telephone: 978-694-3200, email: nero.air@massmail.state.ma.us, or fax : 978-694-3499, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 and Table 3 requirements. A written report shall be submitted to Permit Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	7. The Permittee shall report triennially to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.

Table 7 Key:

EU# = Emission Unit Number
BAW = Bureau of Air and Waste

4. SPECIAL TERMS AND CONDITIONS

A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 8 below:

Table 8	
EU	**Special Terms and Conditions**
EU1	1. The Permittee shall ensure that the height of the stack exit shall be at least 10 feet above the generator enclosure roof. EU1 shall be operated only during emergencies as defined in 310 CMR 7.26(41) and for a maximum one-hour test/maintenance period once a week, unless the Permittee has requested and been granted written approval to operate this generator for a non-emergency event, such as a planned maintenance shutdown.
EU1 – EU5	2. The Permittee shall ensure that the noise generated by the operation of the subject units shall be in compliance with Regulation 310 CMR 7.10 and the BAW's Noise Policy No. 90-001 (copy attached).
EU4	3. The Permittee shall extend the existing stack height of stack nos. 17 and 20 to a minimum of 10 feet above the ground, within 60 days of the date of this Approval. The Permittee shall send photographs and written notification to this Office, within seven (7) days of the completion of this task.
EU7 – EU9	4. The Permittee shall follow the Standard Operating and Maintenance Procedures (SOMP) for EU7 and EU8 to maintain efficient operation of scrubbers to capture and control VOC and HAP emissions and the SOMP to minimize VOC and HAP emissions from EU9.
Facility-wide	5. This Plan Approval supersedes the previous Plan Approvals: (MBR-08-COM-002, issued to the Permittee on September 15, 2008; MBR-89-COM-107 and MBR-89-IND-255, issued to the Permittee on December 27, 1989), in their entirety, with the exception that all plan application materials submitted as part of the Plan Approval become part of this Plan Approval.
	6. The Permittee shall ensure that any modifications or new equipment installation which increases emissions by one (1) ton or more per year shall comply with the requirements of Regulation 310 CMR 7.02. Any other modifications (such as moving equipment for increased efficiency, changing solvents, or changing exhaust configurations) shall be noted on the Source Registration/Emission Statement Forms as required by Regulation 310 CMR 7.12. These modifications cannot violate the condition of this facility-wide approval, including the emission restrictions.
	7. The Permittee shall submit Compliance Certifications Form within 60 days of commencement of operation for any emergency generator and/or boilers to MassDEP for any proposed new boilers and emergency generators under the Environmental Results Program (ERP) in accordance with 310 CMR 7.26(32) and 310 CMR 7.26(42), as applicable.
	8. The Permittee shall report decommissioning of any existing emergency generators and boilers on the next triennial Source Registration Forms.
	9. All VOC-containing raw material, waste, and cleaning rags used in conjunction with cleaning operations shall be placed in tightly covered containers when not in use, and shall be collected for proper recycling or disposal.
	10. All VOC-containing material shall be transported and stored in tightly covered containers. All emissions associated with cleaning operations shall be included in the monthly and 12 month rolling emissions calculations to determine the Permittee's compliance status with emission limits contained in Table 3 above.

Table 8	
EU	**Special Terms and Conditions**
	11. The Permittee shall label each emission unit (EU) approved herein for proper monitoring, recordkeeping, and reporting purposes.

Table 8 Key:

EU# = Emission Unit Number
BAW = Bureau of Air and Waste
VOC = Volatile Organic Compounds
HAP = Hazardous Air Pollutants
SOMP = Standard Operating and Maintenance Procedure

B. The Permittee shall install and utilize each exhaust stack with the following parameters as contained in Table 9 that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as "shanty caps" and "egg beaters.", for the stack number and associated Emission Units as contained in Table 1 that are regulated by this Plan Approval.

Table 9				
Stack#	**Stack Height Above Ground (feet)**	**Stack Inside Exit Dimensions (feet)**	**Stack Gas Exit Velocity Range (feet per second)**	**Stack Gas Exit Temperature Range (^{o}F)**
32	50	1.5	115-157	800-1083
19	80	0.7	114-201	605-820
16	62	0.9	53-77	731-990
4	60	0.5	57-77	820-1110
5	75	0.5	36-48	718-845
6	75	0.5	36-48	718-845
7	75	0.4	64-85	777-1052
8	75	0.4	130-176	901-1219
9	60	0.4	130-176	901-1219
10	40	0.5	82-112	901-1219
11	65	0.5	93-127	856-1159
12	25	0.4	136-185	901-1219
13	25	0.5	136-184	820-1110
14	10	0.3	51-70	773-1047
15	15	0.3	129-175	901-1219
17	6*	0.2	65-89	646-874

Table 9				
Stack#	**Stack Height Above Ground (feet)**	**Stack Inside Exit Dimensions (feet)**	**Stack Gas Exit Velocity Range (feet per second)**	**Stack Gas Exit Temperature Range (^{o}F)**
18	65	0.3	108-147	742-1004
20	6*	0.3	137-186	718-972
21	14	0.2	108-147	714-966
22	14	0.2	108-147	714-966
33	50	0.67	94-128	833-1127
34	50	0.67	74-100	937-1268
35	43	0.33	132-179	901-1219
36	35	0.5	136-184	820-1110
44	26	0.33	18-25	891-1206
37	30	1.5	34-46	165-224
38	25	1.5	34-46	425-575
1	70	4	54-74	59-81
39	70	3.5	54-74	59-81
3	68	1.7	20-50	59-81
43	38	1.167	35-48	61-83

Table 9 Key:

^{o}F = Degree Fahrenheit
* = Stack Nos. 17 and 20 shall be increased to a minimum of 10 feet above ground (See Table 8, Condition No. 3)

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).

B. If asbestos remediation/removal occurs as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.

C. If construction or demolition of an industrial, commercial or institutional building occurs as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.

D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future. Nor does this Approval imply compliance with this or any other applicable federal, state, or local regulations now or in the future.

F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.

G. This Plan Approval may be suspended, modified, or revoked by MassDEP if at any time, MassDEP determines that any condition or part of this Plan Approval is being violated.

H. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

I. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Enclosed is a stamped approved copy of the application submittal.

Should you have any questions concerning this Plan Approval, please contact Dhiraj Desai by telephone at 978-694-3282, or in writing at the letterhead address.

Dhiraj B. Desai
Environmental Engineer

Susan P. Ruch
Deputy Regional Director
Bureau of Air and Waste

cc: Board of Health, 1625 Mass Avenue, Lexington, MA 02173

Fire Headquarters, 45 Bedford Street, Lexington, MA 02173
MassDEP/Boston – Y. Tian (E-Copy)
MassDEP/NERO – M. Altobelli, E. Braczyk (E-Copy)
MassDEP/NERO – M. Persky, D. Desai (Hard-Copy)